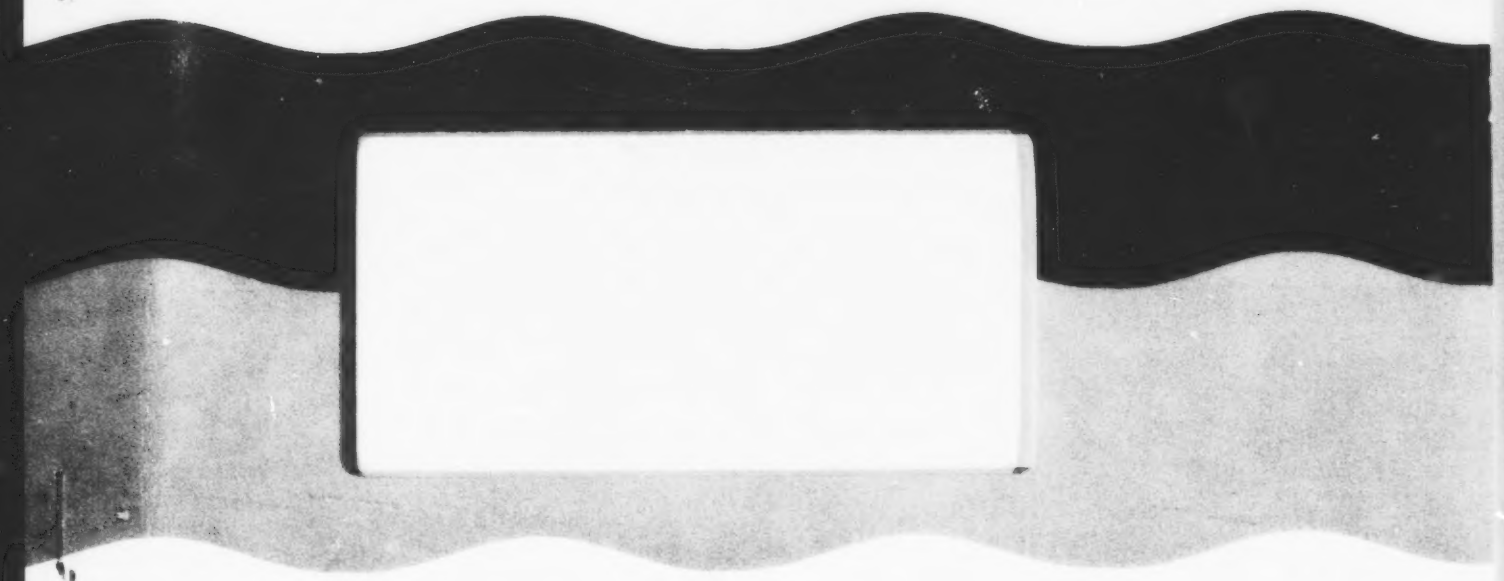
Transport Canada Transports Canada

TP 1624

Marine Casualty Investigations

Enquêtes sur les accidents maritimes



Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

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INVESTIGATION REPORT INTO THE CIRCUMSTANCES ATTENDING THE STRIKING OF THE WHARF AT SAINT-BERNARD-DE-L'ÎLE AUX-COUDRES BY THE FERRY "JOSEPH SAVARD" CAUSING INJURY TO 15 PASSENGERS AND DAMAGE TO 15 VEHICLES ON JULY 13, 1986.

REPORT No. 460

These sections of the Investigation Report prepared pursuant to Section 542, or of the Preliminary Inquiry Report prepared pursuant to Section 545, of the Canada Shipping Act, are released for accident prevention purposes only and are confined to cause-related circumstances.

This report and its contents may be deficient and misleading if used in any other process and are not to be used or admitted in evidence in any legal proceedings, either civil or criminal, arising out of the casualty described in the report. The statements, opinions and findings in the report are those of the Marine Casualty Investigations Division only and do not constitute admissions made by or on behalf of Her Majesty the Queen in right of Canada.

Ces sections du rapport d'investigation ou du rapport préliminaire sont rédigées en vertu des articles 542 et 545 respectifs de la Loi sur la marine marchande du Canada et ne sont publiées qu'à des fins de prévention des accidents seulement et ne portent que sur les circonstances entourant le cas à l'étude.

Ce rapport et son contenu peuvent être insuffisants et trompeurs s'ils sont utilisés à d'autres fins et ne peuvent être utilisés ou acceptés comme preuve dans quelque procédure que ce soit, au civil ou au criminel, même si ces procédures découlent de l'accident décrit dans ledit rapport. Les déclarations, les opinions et les constatations de ce rapport appartiennent uniquement à la section des Enquêtes sur les accidents maritimes et ne constituent pas une acceptation de la part ou au nom de Sa Majesté du chef du Canada.

392825

INVESTIGATION REPORT INTO THE CIRCUMSTANCES ATTENDING THE STRIKING OF THE WHARF AT SAINT-BERNARD-DE-L'ÎLE-AUX-COUDRES BY THE FERRY "JOSEPH SAVARD" CAUSING INJURY TO 15 PASSENGERS AND DAMAGE TO 15 VEHICLES ON JULY 13, 1986.

Particulars of Vessel

Name	"JOSEPH SAVARD"
Official Number	806123
Port of Registry	Quebec
Call Sign	VD 2235
Gross Tonnage	1,444.78
Net Tonnage	588.76
Length	58.64 m
Breadth	21.35 m
Depth	4.60 m
Draught	F 4.11 m A 4.27 m
Type	Car and passenger ferry
Built	Of steel, in 1985, at Lauzon, Qc., by Versatile Davie Inc.
Propulsion	Two turbocharged 1131 Alco Bombardier diesel engines, clutched to a single shaft and a controllable pitch propeller. 1972 b.h.p.
Bow Thruster	G.M. Diesel 250 b.h.p.
Cargo (at time of incident)	2 buses, 67 automobiles, and 5 motorcycles
Crew	8
Passengers (at time of incident)	246
Load Line Authority	Government of Canada

Owners	Roylease Ltd. Montreal, Qc.
Operators	Société des traversiers du Québec Quebec, Qc.

Navigating equipment

Radar (1)	Racal-Decca, Type 65419
Radar (2)	Racal-Decca, Type 65419
Echo Sounder	Elac LAZ 50
VHF (1)	Sailor, Type RT 144 AC
VHF (2)	Sailor, Type RT 144 AC
Magnetic Compass	John Lilley & Gillie, Reflecting

Description of the Vessel

The "JOSEPH SAVARD" is a single deck vehicle and passenger ferry. She has two main engines, either of which, or both, may be engaged, through a clutch and reduction gearing, to a single shaft driving the controllable pitch propeller. She is also equipped with a bow thruster.

The vessel entered service in the spring of 1986, on the Saint-Joseph-de-la-Rive to Saint-Bernard-de l'Île-aux-Coudres crossing. She is licensed to carry 400 passengers.

All the required Coast Guard Safety Inspection Certificates were on board, and all were valid.

NOTE: All times in this report are Eastern Daylight Saving Time (UTC minus 4 hours).

Background

At about 1459, July 13, 1986, on making her approach to the ferry terminal at Saint-Bernard-de-l'Île-aux-Coudres the "JOSEPH SAVARD" struck the terminal's north-east corner heavily, causing some passengers and a member of the crew to lose their footing and fall.

One passenger lost consciousness after a fall on a stairway and was later transported by ambulance to a hospital at Baie-Saint-Paul. She was released the same day. Other passengers were given first-aid for lesser injuries by a doctor at his surgery in Saint-Louis on Île-aux-Coudres.

Minor damage was caused to the vessel's rubber composition sponson fendering, to a support chain of the wharf fendering and to some vehicles on board.

The accident caused no pollution.

Particulars of the hospitalized person

Name	Mélanie Frappier
Position on board	Passenger
Age	13
Address	Buckingham, Qc.

Narrative

The "JOSEPH SAVARD" left Saint-Joseph-de-la-Rive at 1440 on Sunday July 13, 1986, with a crew of 8, 246 passengers, 2 buses, 67 automobiles and 5 motorcycles on board. The vehicles had been guided to their parked positions on the vehicle deck by members of the deck crew. No vehicle had its wheels chocked by blocks.

Some passengers had left their vehicles and had gone to the passenger deck, others stayed on the vehicle deck, some in and some out of their vehicles.

On the ferry's approach to the ferry terminal at Saint-Bernard-de-l'Île-aux-Coudres, many of the passengers were on the vehicle deck, or were returning to their vehicles from the passenger deck, to be ready for disembarkation. A group of passengers, estimated to number about twenty, was standing at the forward vehicle deck barrier.

On the navigating bridge were the master and chief officer. In accordance with normal practice, the master was operating the main engine and bow thruster from the port wheel-house console. The chief officer was assisting him, steering the vessel from the wheel at the centre console. As visibility was very good, neither of the vessel's radars was operating nor was the echo-sounder. The four members of the deck crew were standing-by at their mooring stations, fore and aft. The engine-room was manned.

Shortly before 1500, the vessel was heading approximately south-west (True) towards the north-east corner of the ferry terminal, the northern face of which was open. (See chartlet.) She was in a position approximately 200 m from the ferry terminal and some 115 m from the end of the ruined jetty at the Île-aux-Coudres shipyard which is situated to the north-east of the ferry terminal. During the vessel's approach to the terminal, speed had been progressively reduced and her propeller was in neutral pitch. The vessel was estimated to be making 2.5 knots over the ground and she was reported to have had steerage way. The vessel was operating on one of her two main engines.

In this position it was observed by those on the bridge that the main current off the northern face of the terminal was setting towards the east. Towards the shore, inside the main current, was a strong counter-current which was running in a south-westerly direction, under the influence of which the vessel was progressively falling as she approached the terminal.

The combined effect of these currents was reported to have been to set the vessel towards the shore and inside the end of the ferry terminal while, at the same time, increasing her speed of approach.

To counteract the effect, the wheel was put 20° to starboard and the propeller pitch put to half ahead momentarily. The bow thruster was also activated to turn the vessel's head to starboard. A few seconds later, when it was observed that these measures had no effect, propeller pitch was put to full astern and the wheel hard to port. The vessel was estimated to be about 100 m from the ferry terminal.

As it appeared to those on the bridge that the vessel would probably strike the ferry terminal, a series of short blasts was sounded on the ship's whistle to alert the deck crew. At this time the second steering motor was started to increase the speed of helm response.

One of the forward mooring party, fearing that the port forward mast would fall on impact, moved forward to warn the passengers standing at the bow barrier on the vehicle deck, calling out to them to come aft out of the way. He also warned them not to pass between the bumpers of the parked cars.

Complying with these instructions, the passengers on the vehicle deck were moving aft when the port bow of the ferry struck the steel fender on the north-east corner of the

terminal. Many were seen to fall on impact, as did the crew member who had warned them. After picking himself up the crew member, who was uninjured, obtained a first-aid kit to treat the injured passengers.

At the moment of impact a passenger had started to descend the steel outside stairway from the passenger deck to the vehicle deck. The stairway is on the vessel's port side, and leads aft. She was on the first step down from the passenger deck when the vessel struck the wharf.

The passenger fell backwards and slid down 13 steps on her back, feet first, to a platform halfway down the ladder, where she was caught by some passengers standing there. On falling she struck her back and the back of her head on the ladder, losing consciousness.

It was reported that a fellow passenger, a nurse, went to her assistance, sitting behind her on the ladder, supporting her head and neck until the arrival of a doctor and an ambulance.

On seeing the number of persons who had suffered injuries the master called the shore office of the Société des traversiers du Québec at Saint-Bernard by VHF radiotelephone and asked for medical assistance and an ambulance.

The vessel was meantime brought alongside the terminal and the vehicles driven on to the shore.

On their arrival the doctor and ambulance personnel assessed the extent of the injuries sustained by the passengers. The passenger who had fallen on the stairway was fitted with a neck brace and transported to hospital at Baie-Saint-Paul. There it was determined that she had suffered no fracture. She had, however, suffered a sprained wrist, and severe bruising to her neck, head, back and elbow. After some hours under observation she was released from hospital the same evening. Due to her injuries she was obliged to abandon a course of studies at a local cultural institute and to return home.

Fourteen other passengers were treated for minor bruising and abrasions by the doctor at his surgery in Saint-Louis, Île-aux-Coudres. None were judged to require hospitalization, although each was referred to their own doctor if they required further treatment.

The Société des traversiers du Québec has received

claims for damage to 11 automobiles and 4 motorcycles. It is reported that the damage was consistent with that caused by vehicles shunting against each other and by bumpers riding one over the other. The four motorcycles were reported to be damaged due to their falling over. No skid marks were observed on the deck.

Analysis

1. Weather and tidal conditions

Weather conditions existing at the time of the accident were recorded on board as follows:

Wind	E'ly 4 to 6 knots
Sea	Rippled
Air temperature	14°C
Precipitation	None
Visibility	Very good

The sky was overcast, and, although it had rained earlier in the day, the vehicle deck was reported to be dry at the time of the accident.

The Sailing Directions for the Gulf and River St. Lawrence, sixth edition, 1985, state in Chapter XIV, para. 100:

> Passage de l'Île aux Coudres... The tidal streams in this passage are particularly strong;....

and in Chapter I, para. 598:

> ....The tidal stream turns to flood in this passage roughly 1 hour before the time of low water at Quebec, first setting up the l'Île aux Coudres side.... Flood and ebb streams attain a rate of 3.9 knots and 5.8 knots, respectively, in the summer season with average tides.

High Water, Quebec, on the day of the accident was at 1125 and Low Water at 1850.

Tidal information given on CHS chart No. 1233 for position 47°26'.1 N and 70°24'.1 W, which is about 1650 m NNW of Saint-Bernard ferry terminal, shows that the ebb tide sets 082° (T) x 3.8 knots at four hours after HW Quebec. An explanatory note on the chart states:

> Actual current speed and direction may vary considerably with those given....

Tidal predictions for Saint-Joseph-de-la-Rive for July 13, 1986 were:

HW	0857	17.4 ft
LW	1518	3.1 ft
HW	2142	16.4 ft

It was reported that, at the stage of the ebb tide when the "JOSEPH SAVARD" was making her approach to Saint-Bernard-de-l'Île-aux-Coudres, the current there sets in a NE'ly direction across the northern face of the ferry terminal. It was further reported that there frequently is a counter-current which runs in a SW'ly direction, parallel to and about 150 m from the shore, to the east of the terminal. Both these currents were experienced by the vessel prior to the accident.

2. Manoeuvrability of the vessel

The "JOSEPH SAVARD" is equipped with two main engines, either of which, or both, may be clutched to a controllable pitch propeller. She is also equipped with a bow thruster of 250 b.h.p.

Except in inclement weather it is the practice on board to run only one of the two main engines. This was reported to have been for reasons of fuel economy, and has been the case since the vessel entered service. At the time of the accident, therefore, the power available to go astern was halved from 1,972 b.h.p. to 986 b.h.p. at full shaft revolutions of 900 r.p.m.

It was further reported that the time required to start up and clutch in a second motor from 'cold' was in the region of 20 minutes, and that the speed of the motor in service requires to be reduced in order to clutch in the second. The second motor was not therefore available to increase stern power in the emergency situation observed to be developing as the vessel found herself being set onto the ferry terminal.

On the other hand it was reported that the power available from one motor was sufficient to safely manoeuvre the vessel in fair weather and under normal tidal conditions.

The vessel had a forward speed of about 2.5 knots when the bow thruster was employed to assist in turning the vessel's head to starboard. As the efficiency of bow thrusters is inversely proportional to a vessel's forward speed, its use would have had little effect on the ship's head.

3. Persons injured

Fifteen passengers were examined on board the ferry at Saint-Bernard by a doctor. Of this number 14 went afterwards to his surgery at Saint-Louis to be treated for minor cuts and bruises consistent with a fall.

The fifteenth passenger, who had lost consciousness after a fall on a stairway, was taken to hospital at Baie-Saint-Paul by ambulance.

4. Material damage to vehicles on board

It was reported that damage to vehicles on board was of a minor nature. No estimate of the total cost of the repairs is currently available.

5. How vehicles were loaded

On driving onto the ferry, vehicles are guided to their positions by the chief officer, assisted by the four members of the deck crew. The "JOSEPH SAVARD" berths bow-in at Saint-Joseph-de-la-Rive on the mainland and stern-in at Saint-Bernard-de-l'Île-aux-Coudres thus permitting vehicles to 'drive through'.

At the time of the accident the cars on the ferry were parked in seven fore-and-aft lanes, this being reduced to six lanes, three on each side, in the way of the centreline casing. The two buses were located, one on each side, in the lanes abreast of the casing. The vehicles were separated, front and rear, by a distance varying between 30 cm and 45 cm. There remained a space sufficient for about 3 cars at the after part of the vessel.

It was reported that hard rubber composition chocks are available to chock the wheels of large vehicles, and that this practice is adhered to in bad weather

conditions. The location of the chocks was known to all the deck crew. It is not, however the practice on board to chock the wheels of passenger cars and there are reported not to be sufficient chocks on board to do so. Posted all round the vessel are high visibility yellow and black notices, in French and English, advising drivers to apply their hand brakes. It is not the practice on board for the persons directing traffic to warn drivers verbally to carry out this advice, and it is not known how many vehicles, if any, had in fact set their emergency brakes.

A public notice issued by Transport Canada, concerning recommended safety procedures, states, inter alia, that:

> 4. Operators of motor vehicles on reaching the assigned parking place should stop the motor and set the brakes.
>
> 5. The operator should see that the vehicles at each end of the ferry have their wheels securely blocked immediately after reaching the parking place and before the ferry leaves the dock.

At the time of the accident a copy of this public notice was not posted on the "JOSEPH SAVARD".

The full text of the public notice, which has no precise authority ordering or permitting its publication or posting, is reproduced in Annex 1.

6. Action taken to alert passengers to the impending danger

When the vessel was 20 to 30 m from the terminal, it became apparent that she would strike, and a series of short blasts was sounded on the ship's whistle. The ship's public address system, which could have been used to give a more comprehensible warning to passengers, was not employed.

7. Reporting of the accident

The Shipping Casualties Reporting Regulations state, in part, in Section 4 (2) (a) that a preliminary report shall be made without delay

> by radio communication to a Canadian radio ship reporting station, where the

> shipping casualty, accident or dangerous occurrence takes place in Canadian waters or on a voyage to or from a Canadian port or alongside a port facility in a Canadian port;

Acting on information received, the Marine Casualty Investigation Division of Transport Canada requested Vessel Traffic Services (VTS) Quebec to obtain a report on the accident from the vessel on July 14, 1986.

While all necessary steps were quickly taken to bring medical assistance to the persons injured by the accident, no report under the above Regulations was initiated by the vessel.

A written report on the accident was however submitted by the vessel at a later date, in accordance with the Regulations.

The Regulations are reproduced in Annex 2.

8. Crew qualifications and experience

The whole crew had been on duty since 0700 on July 13, 1986. The crew was completing its sixteenth and final crossing of the day when the accident occurred. They were due to be relieved after the vessel made fast.

The master of the "JOSEPH SAVARD" is the holder of a Master Inland Waters Certificate issued at Quebec in 1953, endorsed as Master Home Trade (under 350 tons). He has 41 years of seagoing experience of which 15 years have been as master on the Saint-Joseph-de-la-Rive to Saint-Bernard crossing.

The chief officer of the "JOSEPH SAVARD" is the holder of a Master Inland Waters Certificate (under 350 tons) issued at Quebec in 1973. He has 26 years of seagoing experience, of which six have been as chief officer on a part-time basis on the Saint-Joseph to Saint-Bernard crossing.

The four members of the deck crew have a minimum of 11 years of seagoing experience each, mostly on the Saint-Joseph to Saint-Bernard crossing.

Findings

The "JOSEPH SAVARD" struck the north-east corner of the

ferry terminal at Saint-Bernard-de-l'Île-aux-Coudres at about 1459 on July 13, 1986, causing injury to 15 passengers, one of whom required hospitalization. Minor damage was caused to 15 of the 74 vehicles aboard and to fendering on the ship and terminal.

It would appear that the following factors contributed to the accident:

- the vessel was under the influence of a strong counter current, which set her onto the terminal, and,
- only half of the vessel's total engine capacity was available for manoeuvring.

Other Findings

The vessel did not comply with Section 4, (2) (a) of the Shipping Casualties Reporting Regulations.

Notwithstanding a Transport Canada recommendation to the contrary and that a supply of chocks was on board, the vehicles at each end of the ferry did not have their wheels chocked.

It is not known how many vehicles, if any, had set their emergency brakes in compliance with the advice to do so contained in the notices posted round the vessel.

Medical assistance was rapidly arranged by the master for those requiring it.

With the exception of the failure to employ the public address system on board, efforts made to warn the passengers were effective as only 15 of 246 passengers were injured, the majority of those only slightly.

OTTAWA, ONTARIO
FEBRUARY, 1987.

ANNEX I

Transport Canada Transports Canada

PUBLIC NOTICE

RECOMMENDED SAFETY PRECAUTIONS WHICH SHOULD BE OBSERVED IN THE CARRIAGE OF MOTOR VEHICLES ON FERRIES

1. The operator of the ferry should not allow a motor vehicle on board until the ferry is made fast to the dock.

2. The ferry should be equipped with strong guard chains or rails, properly installed and maintained in good condition. The guard chains or rails should be in position at the offshore end of the ferry before loading is commenced.

3. Operators of motor vehicles should proceed on or off ferries at a safe speed.

4. Operators of motor vehicles on reaching the assigned parking place should stop the motor and set the brakes.

5. The operator should see that the vehicles at each end of the ferry have their wheels securely blocked immediately after reaching the parking place and before the ferry leaves the dock.

6. The parking arrangement of vehicles should be such as to provide ready escape from any vehicle, in an emergency.

7. The deck area in way of a water curtain should be kept clear at all times.

MINISTER OF TRANSPORT

Ottawa, December 4, 1973.

85-0014
1-74

ANNEX II

CANADA SHIPPING ACT

Shipping Casualties Reporting Regulations

REGULATIONS RESPECTING THE REPORTING OF SHIPPING CASUALTIES, ACCIDENTS, DANGEROUS OCCURRENCES, DEATHS AND DISAPPEARANCES OF PERSONS ON SHIPS

Short Title

1. These Regulations may be cited as the *Shipping Casualties Reporting Regulations*.

Definitions

2. In these Regulations,

"**"Canadian radio ship reporting station" means a Canadian Coast Guard radio station or a Canadian Vessel Traffic Service Centre of the Department of Transport, a Canadian marine radio station operated by the St. Lawrence Seaway Authority or a Canadian harbour radio station; (*station de radiocommunications maritime canadienne*).**"

Application

3. These Regulations apply to all ships in Canadian waters and to all Canadian ships in any waters.

Preliminary Report

4. (1) Where a ship, or a vessel being towed by a ship, is involved in a shipping casualty, an accident or a dangerous occurrence, the master, any certificated officer, operator, member of the crew, pilot or person responsible for the ship or the vessel being towed shall report the incident without delay in accordance with subsections (2) and (3).

(2) Subject to subsection (3), the report referred to in subsection (1) shall be made without delay

(*a*) by radio communication to a Canadian radio ship reporting station, where the shipping casualty, accident or dangerous occurrence takes place in Canadian waters or on a voyage to or from a Canadian port or alongside a port facility in a Canadian port; or

"**(3) Where the report referred to in subsection (1) cannot be communicated by radio from a ship while it is in a Canadian port, the shipping casualty, accident or dangerous occurrence shall be reported by telephone to the local Canadian radio ship reporting station, or to the Canadian Coast Guard Operations Centre of the Department of Transport in Ottawa.**"

APPENDICE II

LOI SUR LA MARINE MARCHANDE DU CANADA

Règlement sur les rapports de sinistres maritimes

RÈGLEMENT CONCERNANT LES RAPPORTS DE SINISTRES MARITIMES, D'ACCIDENTS, D'ÉVÉNEMENTS DANGEREUX, DE DÉCÈS ET DE DISPARITION DE PERSONNES À BORD D'UN NAVIRE

Titre abrégé

1. *Règlement sur les rapports de sinistres maritimes.*

Définitions

2. Les définitions qui suivent s'appliquent au présent règlement.

«**«station de radiocommunications maritime canadienne» Station radio de la Garde côtière canadienne ou centre de Service du trafic maritime du Canada du ministère des Transports, station radio maritime canadienne exploitée par l'Administration de la voie maritime du Saint-Laurent ou station radio d'un port canadien. (*Canadian radio ship reporting station*).**»

Application

3. Le présent règlement s'applique à tous les navires se trouvant dans les eaux canadiennes et à tous les navires canadiens, quelles que soient les eaux dans lesquelles ils se trouvent.

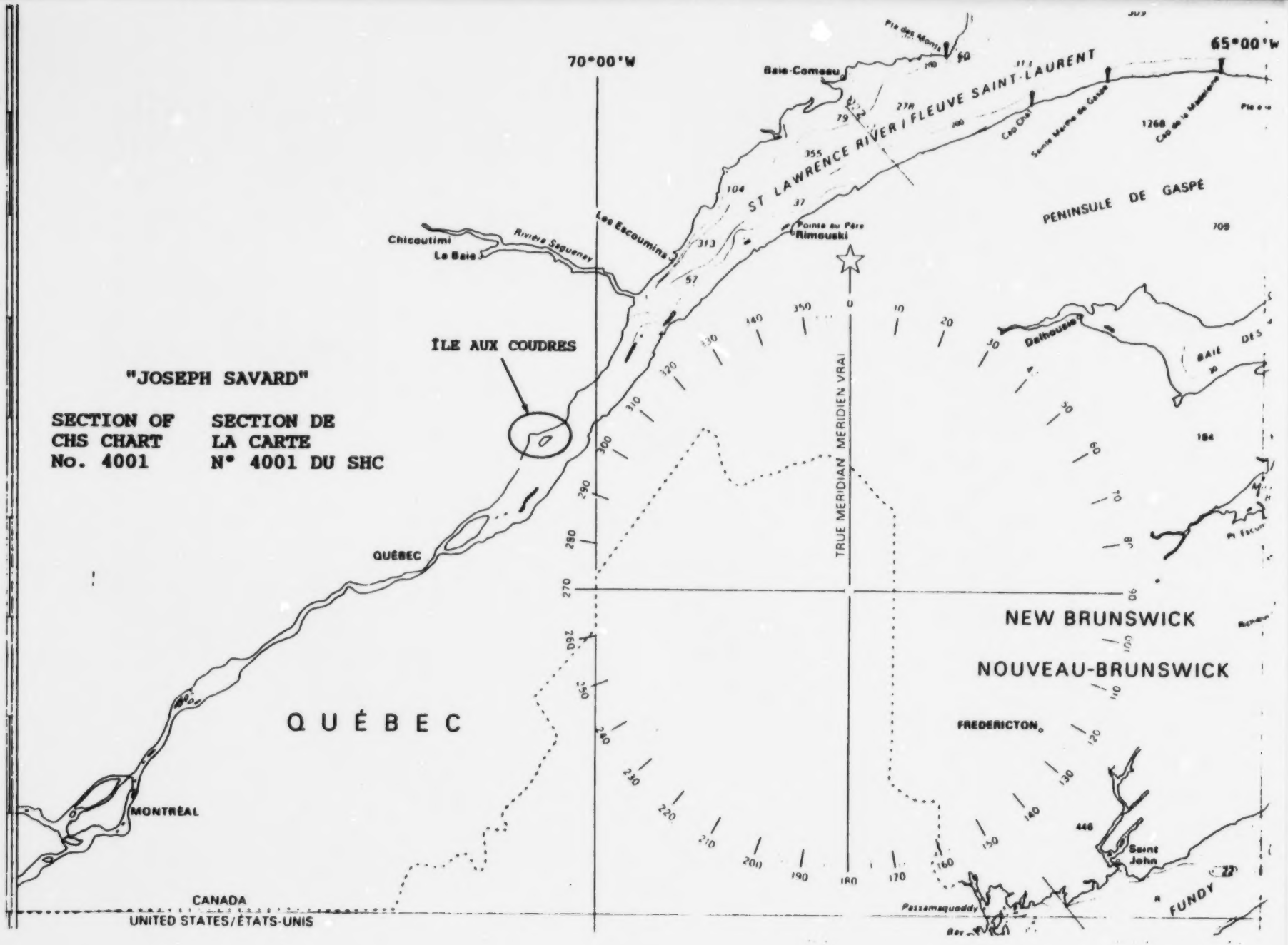
Rapport préliminaire

4. (1) Lorsqu'un navire ou un bâtiment remorqué par un navire est impliqué dans un sinistre maritime, un accident ou un événement dangereux, le capitaine, un officier breveté, l'exploitant, un membre de l'équipage, le pilote ou toute personne responsable du navire ou du bâtiment remorqué doit en faire rapport sans délai, conformément aux paragraphes (2) et (3).

(2) Sous réserve du paragraphe (3), le rapport visé au paragraphe (1) doit, selon le cas:

a) être communiqué sans délai par radio à une station de radiocommunications maritime canadienne, lorsque le sinistre maritime, l'accident ou l'événement dangereux se produit pendant que le navire est amarré à une installation portuaire dans un port canadien ou se trouve en eaux canadiennes, ou se produit au cours d'un voyage à destination ou en provenance d'un port canadien;

«**(3) Dans le cas où le rapport visé au paragraphe (1) ne peut être communiqué par radio à partir d'un navire se trouvant dans un port canadien, le sinistre maritime, l'accident ou l'événement dangereux doit être signalé par téléphone à une station de radiocommunications maritime canadienne ou au Centre des opérations de la Garde côtière du ministère des Transports à Ottawa.**»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49°
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ST LAWRENCE RIVER / FLEUVE SAINT-LAURENT
PENINSULE DE GASPÉ
Baie-Comeau
Les Escoumins
Chicoutimi
La Baie
Rivière Saguenay
Pointe au Père
Rimouski
Dalhousie
BAIE DES
TRUE MERIDIAN MERIDIEN VRAI
QUÉBEC
QUÉBEC
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MONTRÉAL
Saint John
FUNDY
Passamaquoddy
CANADA
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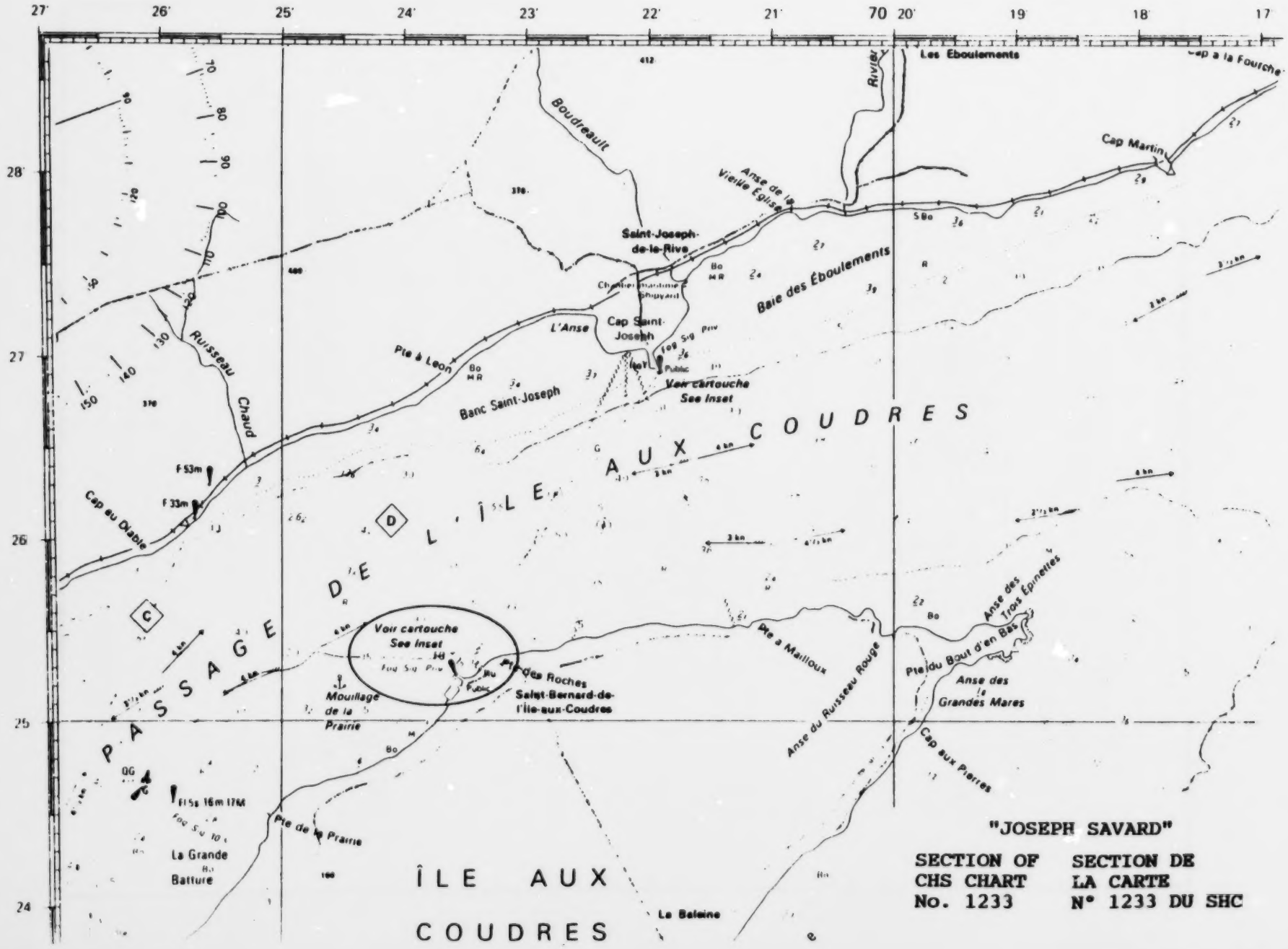
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Les Éboulements
Cap à la Fourche
Rivière
Boudreault
Anse de la Vieille Église
Cap Martin
Saint-Joseph-de-la-Rive
Baie des Éboulements
L'Anse
Cap Saint-Joseph
Pte à Léon
Ruisseau Chaud
Banc Saint-Joseph
Voir cartouche See Inset
Cap au Diable
F 53m
F 33m
PASSAGE DE L'ÎLE AUX COUDRES
Mouillage de la Prairie
Pte des Roches
Saint-Bernard-de-l'Île-aux-Coudres
Pte à Maillioux
Anse du Ruisseau Rouge
Anse des Trois Épinettes
Pte du Bout d'en Bas
Anse des Grandes Mares
Cap aux Pierres
Pte de la Prairie
La Grande Batture
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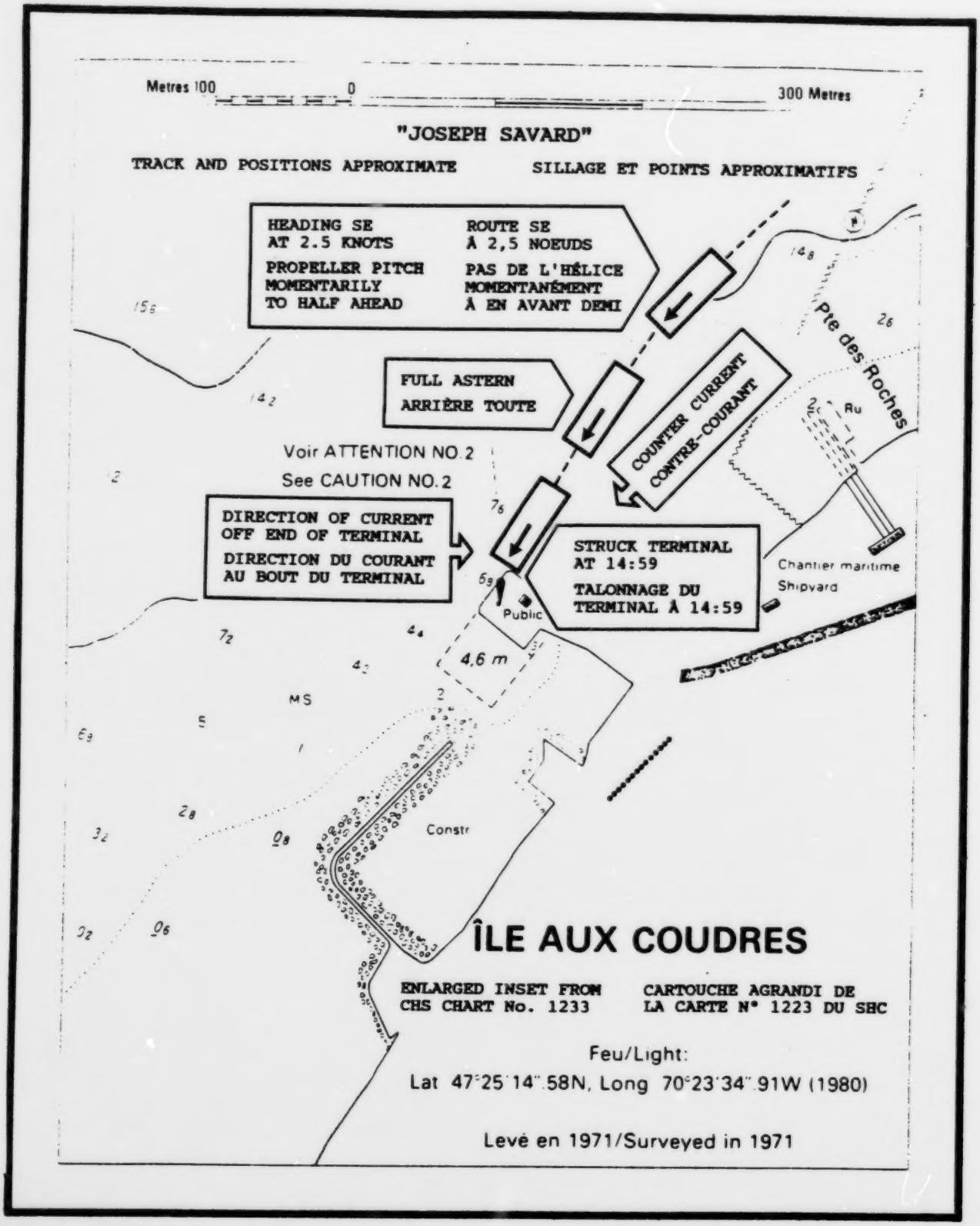
ÎLE AUX COUDRES
La Baleine
"JOSEPH SAVARD"
SECTION OF CHS CHART No. 1233
SECTION DE LA CARTE N° 1233 DU SHC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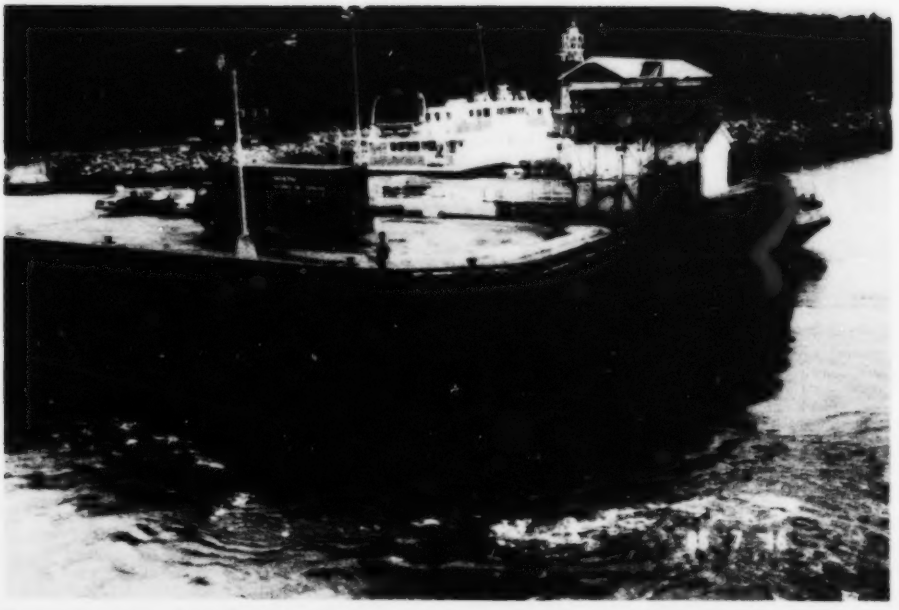
"JOSEPH SAVARD"
TRACK AND POSITIONS APPROXIMATE
SILLAGE ET POINTS APPROXIMATIFS
HEADING SE AT 2.5 KNOTS
ROUTE SE À 2,5 NOEUDS
PROPELLER PITCH MOMENTARILY TO HALF AHEAD
PAS DE L'HÉLICE MOMENTANÉMENT À EN AVANT DEMI
FULL ASTERN
ARRIÈRE TOUTE
COUNTER CURRENT
CONTRE-COURANT
Voir ATTENTION NO.2
See CAUTION NO.2
DIRECTION OF CURRENT OFF END OF TERMINAL
DIRECTION DU COURANT AU BOUT DU TERMINAL
STRUCK TERMINAL AT 14:59
TALONNAGE DU TERMINAL À 14:59
Pte des Roches
Ru
Chantier maritime
Shipyard
Public
4.6 m
MS
Constr
ÎLE AUX COUDRES
ENLARGED INSET FROM CHS CHART No. 1233
CARTOUCHE AGRANDI DE LA CARTE N° 1223 DU SHC
Feu/Light:
Lat 47°25'14".58N, Long 70°23'34".91W (1980)
Levé en 1971/Surveyed in 1971



Ferry terminal at Saint-Bernard-de l'Île-aux-Coudres.
Note steel fender on NE corner of wharf.

Terminal du bac à Saint-Bernard-de-l'Île-aux-Coudres.
Nota: Amortisseur en acier sur le coin NE du quai.

Normal approach to the terminal.

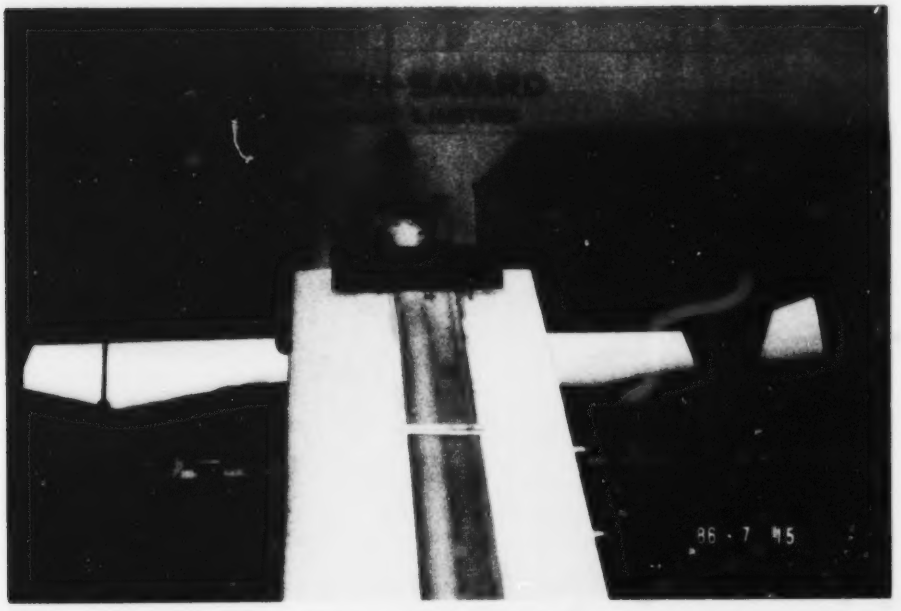
Atterrage normal vers le terminal.

View of ladder
from passenger deck.

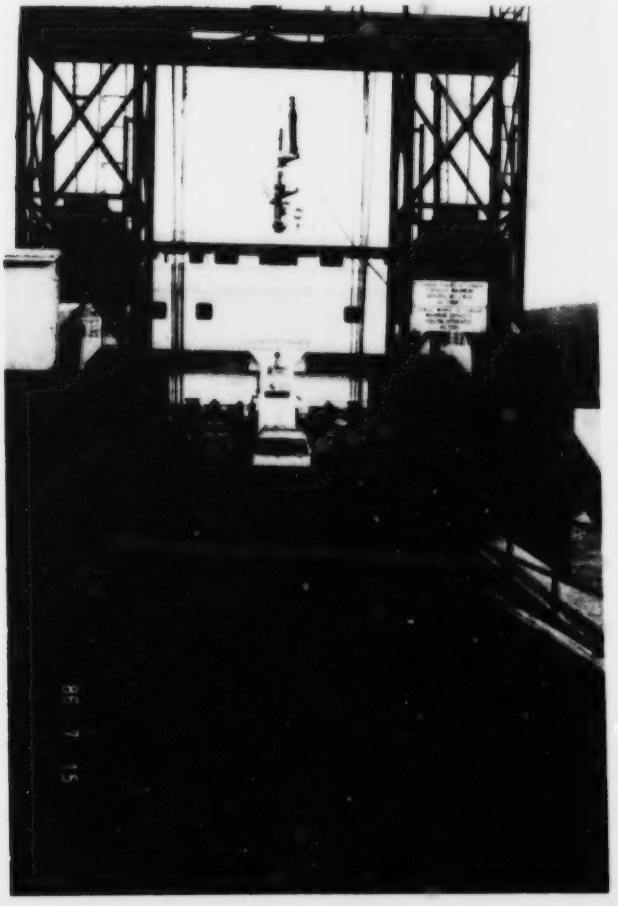
Vue de l'escalier
du pont supérieur.

Passenger fell from
deck to landing.

Passager est tombé
du pont sur
le débarcadère.



View of vehicle deck. Note centreline casing.
Vue du pont des véhicules. Nota: encaissement central.



Discharging vehicles at Saint-Joseph-de-la-Rive.

Déchargemet des véhicules à Saint-Joseph-de-la-Rive.